FSA Modernization Partner

United States Department of Education

Federal Student Aid

Technical Architecture Application Maintenance Services Report

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1   Introduction

1.1   Executive Summary

The *Technical Architecture Application Maintenance Report: August 2002 for FY 2002* summarizes the Integrated Technical Architecture (ITA) team's tasks related to resolving issues associated with the maintenance of FSA applications in production, for the specified month. The ITA provides a standardized, reusable infrastructure for enabling business capabilities within the FSA application community. The long-term vision of the ITA is to provide an integrated, enterprise-wide technical architecture that will enable FSA to reduce the number of custom-built applications that are difficult and costly to update and maintain.

2   FSA Applications Maintained by the ITA in Production

- FAFSA – the Free Application for Federal Student Aid on the web is an application used by college students and schools to submit financial applications via the Internet

- IFAP – Information for Financial Professionals web site is an electronic library for financial aid professionals containing publications, regulations, and guidance regarding the administration of Title IV Federal Student Aid Programs

- FSA Intranet – is an internal portal for FSA employees that provides general information about FSA, FSA Channels, and the Department of Education. The portal also houses information about FSA standards

- Schools Portal – is a homepage for Schools-specific information with links, headlines and calendar function frequented by the schools. The site is customizable and can store bookmarks

- eCampus Based – FSA initiated the Institution or Campus Based (CB) Modernization project. The intent of the project is to modernize the existing CB application architecture; migrating from the current platform (COBOL, IBM Mainframe, VSAM data store) to a relational database platform (Oracle), developing a web-based user interface (WebSphere), along with additional software functionality enhancements. This modernized solution is named eCB (electronic Campus Based). The main objective of the modernization effort is to offer institutions and CB staff an integrated and intuitive solution that increases access to information and self-service capabilities supporting FSA's strategic goals

- Financial Partners Data Mart – provides executive information and decision support capabilities around several key business functions for both the Guaranty Agencies (GAs) and the Lenders. The Data Mart initiative provides infrastructure within the channel and provides initial Risk Management, Customer Relationship Management, Compliance Management, and Portfolio Management functionality related to the thirty-six Guaranty Agencies and the approximately four thousand lenders

- CFO Data Mart – provides reporting capabilities to the Chief Financial Office implementing MicroStrategy and Informatica

- Exit Counseling – utilizes WebSphere and MQ Series to access NSLDS mainframe for specific information

- Students.gov - an award-winning interagency portal sponsored by FSA that provides access to a wide range of public and private information and services targeted towards prospective and current post-secondary education students and their parents

- Program Guidance – provides a central location for resources needed by the Program Development Division within FSA. The application provides documents and profiles to identify relevant information quickly for members of this division.

- Students & Financial Partners Portal – Portals were developed for the Students and Financial Partners channels to provide a central location for information needed by students and financial partners.

3 ITA Products
- IBM HTTP Server – web server

- IBM WebSphere – Java application server

- Network Dispatcher – cluster load balance and failover

- Interwoven – content management application

- Informatica – mainframe data tool that converts mainframe data for Oracle so reports can be generated by MicroStrategy

- Autonomy – search engine

- Viador / JRun – Viador is the product or application for the Schools Portal and JRun is the application server

4 Issue Matrix
The following matrix details the issues encountered by the ITA team from August 1, 2002 to August 30, 2002. The matrix is organized chronologically by application name and date to illustrate the team's progress in resolving the majority of issues and the instances in which the team directed its efforts to seek resolution for an issue. Subsequently, the matrix consists of the following categories: name of the application connected to an issue, description of the issue, steps taken by the ITA team to resolve an issue, the issue's level of priority ranging from high to medium to low, the issue's status whether new, in progress, or closed, and the issue's resolution date. Some issues span a greater time period and closure may not have been possible before the deadline of this report.

5   Issue Resolution Log

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
August 10, 2002	Program Guidance	Program Guidance team reported a problem with their login feature not sustaining a session.	ITA identified a probable fix for the problem and provided CSC with the steps necessary to correct persistent sessions for this application.	Medium	Closed	August 24, 2002
August 1, 2002 – August 31, 2002	FAFSA	WebSphere is recreating the table in the session database when it restarts under a heavy load. This issue has been observed three times in the production environment.	Tested IBM's temporary fix to the Session Creation problem. This fix does not allow WAS to drop the table since it already exists. The fix also prints extra debug messages, which explains why WAS drops the session table. This fix is now installed on all WAS servers. Recreation of this problem to identify the reasons for WebSphere's creation of the table has not been successful. Scenarios are still being investigated to determine root cause of this problem.	Medium	Ongoing	N/A
August 1, 2002 – August 31, 2002	FAFSA	ITA team was tasked with transitioning FAFSA Operations tasks to the VDC team. These tasks involve maintenance and configuration of WebSphere and Network Dispatcher.	Ongoing meetings with CSC have been established to transition all tasks involved with FAFSA operations. This task was finalized March 15, 2002. The ITA continues to support the CSC operations team when needed. The ITA team continues to support CSC personnel in the FAFSA production environment.	Low	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
August 1, 2002 – August 31, 2002	FAFSA	Weekly FAFSA production calls have been scheduled to address issues.	The ITA team has been consistently represented at these meetings and ensures that issues are being resolved promptly.	Low	Ongoing	N/A
August 1, 2002 – August 31, 2002	FAFSA	Web server processes are failing to respond to requests from I.H.S and causing a single CPU to peak at 100% utilization. The application is not impacted, but the server performance is skewed.	This is an ongoing problem. IBM has recommended an upgrade to I.H.S, but this must be tested throughout each environment. As a temporary solution, the process that is hanging the CPU is 'killed' so that performance resumes normally. A schedule to upgrade the version of I.H.S will be presented. This upgrade must be executed and tested in each environment before it can be moved into production. There has been an error detected with the fix provided by IBM. We are currently working with IBM support to fix the installation. IBM has provided another fix for this problem. It has been tested in the development environment and now must be tested in the staging environment before going into production. We are ready to test this upgrade in a staging server with CSC. Once this is complete, the fix can be migrated to the production environment.	Low	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
August 1, 2002 – August 31, 2002	FAFSA	Operations have reported that the FAFSA WebSphere configuration takes some time to initialize if all Servers are rebooted together.	The WAS admin database was only setup for a maximum of 100 connections from the WAS cluster by the CSC admin. ITA has requested that this be increased to 500. These initial attempts to resolve this problem have not been successful. The ITA team is currently working with IBM to try to recreate this problem outside of the production environment. A window in production will need to be established to test some scenarios. Tests will be executed in the performance test environment to try to recreate the error. Attempts have not been successful.	Medium	Ongoing	N/A
August 19, 2002	FAFSA	The FAFSA application was experiencing a slow down in performance due to web servers reaching a maximum configuration parameter within the web server. NCS had provided an application fix and were trying to implement that fix during this period.	It appears that while the application was being restarted to make the applications changes take effect, the number of web server processes increased to try to reconnect to the server that was going down. As a result, the restart scripts for the FAFSA clones needs to be altered to restart the FAFSA application gracefully without causing such behavior.	Medium	Closed	August 19, 2002
August 1, 2002 – August 31, 2002	FAFSA	The FAFSA demo production environment needs to move in to a production system.	As a first step, the ITA is moving the environment's databases to the production database server. The team is also exploring possible final locations for this site. The FAFSA demo site will be migrated to the SUN production environment over the next month, which is scheduled to be completed by the end of September.	Medium	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
August 1, 2002 – August 31, 2002	FAFSA	When the session database goes down for the FAFSA application, WebSphere sends an infinite number of requests to the database server to attempt updates to sessions and create new sessions.	IBM has provided an efix to limit the number of tries to connect to the session database to two before it stops trying. This efix is included in WebSphere 3.5.6. The FAFSA environments will be upgraded to this new version during the month of August, and then migrated into production in October.	Medium	Ongoing	N/A
August 1, 2002 – August 31, 2002	FAFSA	An issue has been identified with Network Dispatcher. When the backup server restarts while the primary is running, an incorrect MAC address is put to the firewall and it hangs there until the routing table is refreshed.	The ITA team has been working with IBM to recreate this problem in their environments. An efix has been provided, and now the ITA team is waiting for Akamai performance testing to be completed so this fix can be tested. The fix has been tested and the problem has been resolved. It now must be migrated into production.	Medium	Ongoing	N/A
August 8, 2002	Schools Portal	The Schools Portal application was not able to connect to the database and users were receiving an application error. Calendar and headlines functionality were lost.	ITA recommended to CSC to restart the JRun application server. CSC restarted the application server and functionality was restored.	High	Closed	August 8, 2002

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
August 16, 2002	Schools Portal	The Schools Portal application users were experiencing problems with the login functionality. They were receiving a memory error when trying to enter the personalization function.	The ITA team determined that Viador had created some defunct processes while it was running. Restarting Viador cleared the problem and application functionality was restored.	High	Closed	August 16, 2002
August 14, 2002	FSANet	The FSANet redesign team is planning for a new release on 8/30/2002. To support this new release, several changes are needed to WebSphere to support the application.	The ITA team provided CSC with the necessary steps and scripts to successfully implement the FSANet application redesign.	Medium	Closed	August 30, 2002
August 23, 2002	FSANet	FSANet needs to be able to search documents indexed by Autoindexer in production. (su35e10, su35e12, su35e7)	The ITA team added FSANet configurations to Autoindexer and DRE. Content cannot be indexed until it exists on the production server.	Medium	Open	N/A
August 29, 2002	FSANet	FSANet needs the capability to deploy Interwoven content to production.	The ITA team added FSANet production servers to Interwoven deployment configuration.	Medium	Closed	8/29/02
August 12, 2002 – August 31, 2002	Extranet	The extranet team requested the capability to enable the deployment of application content to the extranet server (HPL4).	The ITA team provided the necessary steps to install and configure Interwoven OpenDeploy on the server. Once installed, the ITA team assisted with troubleshooting the deployment efforts by the extranet team. Access to all the needed directories and logs was not available so the ITA team continues to work with the application team to address the issue.	Low	Ongoing	N/A

Date Opened	Application	Description	Resolution	Priority	Issue Status	Issue Resolution Date
July 22, 2002	FP Portal	FP Portal indicated that their Organizational Chart is not returning as an Autonomy search result when performing a search on specific names.	ITA determined that the Organization Chart is being recognized by Autonomy and returned as a result for all text inputs except the names that are part of the chart diagram. ITA has opened a ticket with Autonomy support and is working to determine if this problem can be resolved.	Medium	Ongoing	N/A
July 22, 2002	FP Portal	Financial Partners wanted the links on their organization chart to show up in the HTTPFetch search results.	Added an import parameter to the HTTPFetch configuration on su35e7 so that all links are spidered. Organization chart links were not being spidered because all content that is hypertext is ignored by default.	High	Closed	8/12/2002

6   WebSphere Upgrade

The following is a table outlines the upgrade to WebSphere from 3.5.3 to 3.5.5 in the SUN production environment.

Enhancements		
WebSphere upgrade to 3.5.5 scheduled for Mid August	WebSphere	In order to take of advantage of additional functionality, the ITA team is scheduling an upgrade to WebSphere in all SUN environments. This upgrade will take place over the month of July and will include all environments and applications. Communication will be sent out as each environment is upgraded and tested to validate all applications. All environments have been upgraded except for production. This upgrade was completed August 18, 2002.

7 Informatica Upgrade

The following is a table outlines the upgrade to Informatica from 1.7 to 5.1.2 in the SUN production environment.

Enhancements		
Upgrade to Informatica scheduled for end of August	Informatica	In order to take of advantage of additional functionality and remain in a supported environment, the ITA team is scheduling an upgrade to Informatica. This upgrade will take place over the month of June into July and will include all environments and applications. Communication will be sent out as each environment is upgraded and tested to validate all applications. This upgrade has been completed and accepted by all application teams except for the Delinquency Loan Mart. The DLM team is validating the configuration this month.

8 Solaris Upgrade

The following is a table outlines the upgrade to Solaris from 2.6 to 2.8 on all SUN servers.

Enhancements		
Solaris upgrade is scheduled to occur over next several months	Solaris	In order to take of advantage of additional functionality, the ITA team is scheduling an upgrade to Solaris on all SUN servers. This upgrade will take place over the next several months and will include all environments and applications. Communication will be sent out as each environment is upgraded and tested to validate all applications. A completion date will be provided once the project is further along.